



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/854,934

05/15/2001

Sung-Joo Kim

Q63985

7945

7590

09/21/2004

SUGHRUE, MION, ZINN
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER

PATEL, KANJIBHAI B

ART UNIT

PAPER NUMBER

2625

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/854,934

Applicant(s)

KIM, SUNG-JOO

Examiner

Kanji Patel

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-8,10-11,13 is/are rejected.
- 7) ☒ Claim(s) 3,5,9,12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response to Amendment

1. Applicant's amendment filed on 5/25/04 has been entered and made of record.
With this amendment claims 8-13 are added new.
Claims 1-13 are pending in the application.

Response to Arguments

2. Applicant's arguments, see page 6 of the remark, filed 5/25/04, with respect to the rejection of claims 1-7 under 103(a) has been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Chang et al. (US 6,671,319 B1).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4, 6-8,10-11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (US 6,671,319 B1).

For claim 1, Chang et al. disclose an adaptive motion estimation method (figure 9), the motion estimation method comprising the steps of:

(a) inputting a frame in units of macro blocks (step 410 in figure 4; step 910 in figure 9) and a search area (steps 915, 930, 935, 945 in figure 9), and estimating

candidate motion vectors for a macro block desired to be estimated (steps 940, 955, 958 in figure 9; also see figure 4); and

(b) if an error of the candidate motion vectors estimated in step (a) is in a threshold range (step 940 in figure 9), estimating motion in a restricted search area centered on the estimated location, and otherwise, estimating motion in the whole of said search area (column 6, lines 53-61).

For claim 2, Chang et al. disclose the motion estimation method of claim 1, wherein a zero motion vector (column 14, lines 46-55; column 10, lines 19-41), a median of motion vectors of neighboring macro blocks, and a value estimated from the previous or next frame are generated, and a candidate motion vector is obtained by selecting a value best matching the macro block desired to be estimated, among the three values (figures 10 -11).

For claim 4, Chang et al. disclose the motion estimation method of claim 1, wherein the threshold in step (b) is adjusted by estimating an encoding time for the current frame at each slice unit corresponding to the macro block group, based on a target encoding time calculated in advance (column 14, lines 5-22 a dynamic threshold changes with information change).

For claim 6, see the rejections of at least claims 1 and 2 above.

For claim 7, Chang et al. disclose the motion estimation apparatus of claim 6, further comprising: a half pixel motion estimation unit (column 14, lines 38-40) for estimating half pixel motion, referring to the location of the estimated value estimated by the motion estimation unit.

For claim 8, see the rejections of claims 1-2 and 6 above.

For claim 10, Chang et al. disclose an adaptive motion estimation processing method as claimed in claim 8, wherein a method for calculating the motion vector corresponding to neighbor blocks (figures 10-11; column 15, line 15 to column 16 line 36) comprises determining a median value of motion vectors corresponding to one or more neighbor blocks of the received image data, wherein each of the neighbor blocks are positioned in a location within the image data other than a location of the selected portion.

For claim 11, see the rejection of claim 8 above.

For claim 13, see the rejection of claim 10 above.

Allowable Subject Matter

4. Claims 3, 5, 9 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other prior art cited

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

O'Connell et al. (US 5,537,155) disclose a method for estimating motion in a video sequence.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kanji Patel whose telephone number is (703) 305-4011. The examiner can normally be reached on Monday to Thursday from 8:00 a.m. to 6:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kanji Patel
Art Unit 2625
September 17, 2004


KANJIBHAI PATEL
PRIMARY EXAMINER